ABSTRACT

An encapsulation material for use within a microelectronic device includes a polymeric base resin that is filled with a fibrous reinforcement material. The fiber reinforcement of the encapsulation material provides an enhanced level of crack resistance within a microelectronic device to improve the reliability of the device. In one embodiment, a fiber reinforced encapsulation material is used to fix a microelectronic die within a package core to form a die/core assembly upon which one or more metallization layers can be built. By reducing or eliminating the likelihood of cracks within the encapsulation material of the die/core assembly, the possibility of electrical failure within the microelectronic device (e.g., within the build up metallization layers) is also reduced.